

DOCKET NO. 160557

PATENT

Serial No. 10/717,343

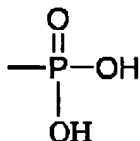
Response to Office Action dated Sept. 21, 2004

Listing of Claims

This listing of claims will replace all prior versions and listings of claims in this patent application.

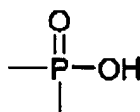
- 1) (Cancelled)
- 2) (Currently Amended) A formulation according to Claim 23 ~~1~~, wherein the hectorite is selected from the group consisting of calcium hectorite and sodium hectorite.
- 3) (Currently Amended) The formulation according to Claim 23 ~~1~~, wherein the hectorite is sodium hectorite.
- 4) (Cancelled)
- 5) (Currently Amended) The paint formulation according to Claim 23 ~~1~~, wherein the phosphonate additive is selected from the group consisting of:

(a) Phosphonic acid compounds that contain at least two moieties having the structure:



and salts thereof,

(b) Phosphinic acid compounds that contain at least two moieties having the structure:



and salts thereof, and

- (c) Compounds which may form phosphonic or phosphinic acids, or salts thereof, ~~under the conditions of use in making these paint formulations, and~~
- (d) ~~The lithium, sodium, potassium, calcium or magnesium salts of the compounds described under (a), (b) and (c).~~
- 6) (Currently Amended) The paint formulation according to Claim 23 ~~1~~, further comprising an alkali swellable-rheological additive.

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- 7) (Currently Amended) The formulation according to Claim 23 + wherein the hectorite is sodium hectorite and the phosphonate compound is selected from the group consisting of:
- a) Diphosphonic acids of formula $R^1R^2C(PO(OH)_2)_2$,
 - b) Diphosphonic acids of formula $R^1-CR^2(PO(OH)_2)-R^3-CR^2PO(OH)_2-R^5$,
 - c) Phosphonic acids with general formula $R^1R^4C=C(PO(OH)_2)_2$, and
 - d) The lithium, sodium, potassium, calcium and magnesium salts of the compounds described under a), b) and c),
- where R^1 can be selected from the group comprising H, a linear or branched alkyl, alkene, hydroxyalkyl, aminoalkyl, hydroxyalkene, aminoalkene with 1 to 22 carbon atoms or an aryl, hydroxyaryl, aminoaryl with 6 to 22 carbon atoms; R^2 can be selected from the group comprising R^1 and OH; R^3 is an alkyl with 0 to 22 carbon atoms; and both R^4 and R^5 can be selected from the group R^1 .
- 8) (Currently Amended) The formulation according to Claim 23 +, wherein the phosphonate additive is selected from the group consisting of 1-hydroxyethylene-1,1-diphosphonic acid sodium salt or an ester thereof.
- 9) (Original) The formulation according to Claim 8, wherein the hectorite is sodium hectorite.
- 10) (Currently Amended) ~~A The paint formulation of Claim 23 comprising:~~ a) wherein the hectorite clay comprises about 0.1 to 10 wt.% hectorite clay; and the b) one or more phosphonate additives comprise about 0.5 to 6 wt.% based on the weight of the hectorite clay of one or more phosphonate additives; and c) water.
- 11) (Original) The paint formulation according to Claim 10, wherein the hectorite is selected from the group consisting of calcium hectorite and sodium hectorite and the formulation contains a rheological additive.
- 12) (Original) The paint formulation according to Claim 10, where the phosphonate additive is selected from the group consisting of a 1-hydroxyethylene-1,1-diphosphonic acid, a salt thereof and an ester thereof.
- 13) (Currently Amended) A method of making a an automotive metallic paint formulation comprising:
- a) ~~treating a mixture of beneficiated or unbeneficiated natural hectorite and water~~ with one or more phosphonate additives; and

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- b) adding ~~such~~ the treated mixture to ~~the~~ a paint formulation which comprises metallic flakes.
- 14) (Currently Amended) A ~~The~~ method of Claim 13 ~~making a paint formulation, comprising:~~
- a) treating a mixture of hectorite and water with the one or more phosphonate additives to form a clay slurry; and
 - b) drying the resultant treated mixture; and
 - c) adding ~~such~~ the dried treated mixture to the paint formulation which comprises the metal flakes.
- 15) (Currently Amended) The method according to Claim 14, wherein the natural hectorite is sodium hectorite and the hectorite clay and phosphonate additive are added as a mixture.
- 16) (Currently Amended) A ~~The~~ method of Claim 13 ~~making a paint formulation, comprising:~~
- ~~a) treating a mixture of hectorite and water with one or more phosphonate additives to form a clay slurry; and~~
 - ~~b) drying the treated mixture; and~~
 - e) adding ~~such~~ the treated mixture to the paint formulation as a pregel in water.
- 17) (Currently Amended) A ~~The~~ method according to Claim 16, wherein the phosphonate additive is 1-hydroxyethylene-1,1-diphosphonic acid tetra sodium salt.
- 18) (Cancelled)
- 19) (Cancelled)
- 20) (Cancelled)
- 21) (Cancelled)
- 22) (Currently Amended) The metallic paint formulation of Claim 23 ~~18~~ further comprising an alkali swellable rheological additive.
- 23) (Currently Amended) An automotive metallic paint formulation comprising:
- a) at least 1% of a ~~chemical selected from the group consisting of~~ beneficiated or unbenediciated natural hectorite clay ~~and synthetic hectorite clay~~; and
 - b) from about 0.5 to 15 wt.%, based on the weight of the clay, of one or more phosphonate additives;
 - c) metallic flakes selected from the group consisting of aluminum, copper and mixtures thereof; and
 - d) water.

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- 24) (Currently Amended) ~~The A~~ metallic paint formulation of ~~Claim 23~~ wherein the clay, phosphonate and water were added as a pregel during the batch making prepared by the process of Claim 16.
- 25) (Currently Amended) The ~~metallic paint formulation- method~~ of Claim ~~13~~ 23 wherein the clay, phosphonate and water were are added as a pregel or as a post-correction additive.
- 26) (Original) The metallic paint formulation of Claim 23 further comprising an alkali swellable chemical.
- 27) (Currently Amended) ~~The A~~ metallic paint formulation of ~~claim 23~~ wherein the clay and the phosphonate additive were added to the formulation as a mixture prepared by the process of claim 13.
- 28) (Currently Amended) A ~~The~~ metallic paint formulation of claim 23 in the form of a sprayable metallic paint comprising:
- a) ~~at least 1% of a chemical selected from the group consisting of hectorite clay and synthetic hectorite clay; and~~
 - b) ~~from about 0.5 to 15 wt.%, based on the weight of the clay, of one or more phosphonate additives;~~
 - c) ~~aluminum metallic flakes; and~~
 - d) ~~water.~~
- 29) (Currently Amended) The sprayable metallic paint formulation of Claim 28 prepared by a process wherein the clay, phosphonate and water were added as a pregel ~~during the batch making process.~~
- 30) (Currently Amended) The sprayable metallic paint formulation of Claim 28 prepared by a process wherein the clay, phosphonate and water were added as a pregel as a post-correction additive.
- 31) (Currently Amended) The sprayable metallic paint formulation of Claim 28 further comprising an alkali swellable chemical.

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- 32) (Currently Amended) The sprayable metallic formulation of claim 28 prepared by a process wherein the clay and the phosphonate additive were added to the formulation as a mixture.
- 33) (New) The paint formulation of Claim 5 wherein the phosphonate additive is selected from lithium, sodium, potassium, calcium and magnesium salts of the compounds described under (a), (b) and (c).